



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

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<b>Project Title</b>  <b>Solving the Global Water Crisis</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives</b> The purpose of my experiment is to test what the most effective way to purify water is. I compared Photocatalysis, Reverse Osmosis, Graphene, and Activated Carbon water treatment methods.</p> <p><b>Methods</b> A Reverse Osmosis system, graphene, activated carbon, and titanium dioxide. I performed the experiment by running water through the filters and measuring the TDS (Total Dissolved Solids) using an electrical conductivity meter.</p> <p><b>Results</b> The change in TDS (Total Dissolved Solids) levels were compared after passing through each filter. The performance of the Reverse Osmosis was shown to be the most effective at a 22.52% decrease in TDS (Total Dissolved Solids).</p> <p><b>Conclusions</b> Repeated trials with multiple filters revealed that Reverse Osmosis is the best at filtering contaminants from water. It is concluded that Reverse Osmosis is the most effective filter out of Photocatalysis, Graphene, Reverse Osmosis, and Activated Carbon.</p>	
<b>Summary Statement</b>  I tested various filters and found that Reverse Osmosis is the most effective.	
<b>Help Received</b>  None. I designed and carried out the experiment and built the filters myself.	